

**ABSTRACT**

Provided are fuzzy distance transform-based methods, and an algorithm therefor, for analyzing digital images defining a volumetric region of an object from a digital image comprising finding a set of points in the image to generate a fuzzy subset, and calculating the fuzzy distance transform (FDT) of the fuzzy subset. The invention deals with the extraction of object features from digital images acquired at low resolution, specifically, the measurement of structural thickness distribution along an object. Targeted applications comprise, but are not limited to, the measurement of trabecular bone thickness in magnetic resonance or computed tomography images. Also provided are systems and device for utilizing the disclosed methods and algorithm to extract the object features from the digital images.